

WHAT I S CLAIMED IS:

1. A mixture supplying apparatus for a direct injection internal combustion engine, comprising:

a mixing chamber that mixes fuel with fresh air; and

a valve train that opens and shuts an exhaust opening to exhaust mixture from the missing chamber; wherein

the mixture supplying apparatus is installed in a cylinder of the internal combustion engine and exhausts the mixture from the exhaust opening to the cylinder.

2. A mixture supplying apparatus for a direct injection internal combustion engine according to claim 1, wherein

the mixing chamber is provided a fresh air intake and a fuel intake, the both intake is provided an air injection valve and a fuel injection valve, respectively.

3. A mixture supplying apparatus for a direct injection internal combustion engine according to claim 1, wherein

the valve train that opens and shuts the exhaust opening is composed of a outwardly opening valve.

4. A mixture supplying apparatus for a direct injection internal combustion engine according to claim 2, wherein

the air injection valve injects air to the offset position form a centerline of the mixing chamber, the fuel injection valve injects fuel along a centerline of the mixing chamber to the mixing chamber.